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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,231	01/20/2004	Gary Michael Everingham	051481-5123	6454

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WASHINGTON, DC 20004

EXAMINER

FRISTOE JR, JOHN K

ART UNIT	PAPER NUMBER
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3751

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/759,231

Applicant(s)

EVERINGHAM ET AL.

Examiner

John K. Fristoe Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/20/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 9/20/2004 is acknowledged by the examiner.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 9-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants recite in claims 9 and 19 that the valve shaft is “coupled” to the actuator shaft or device. The use of the term “coupled” within this environment is inaccurate and renders the claim indefinite since the valve shaft is not “coupled” to the actuator shaft. The valve shaft merely abuts the actuator shaft during a portion of the operation of the valve and also the valve shaft does not abut the actuator shaft at all during a portion of the operation of the valve therefore the valve shaft and actuator shaft are not “coupled”

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3, and 5-7 as well as 9, 11, 13-17, 19, and 24 as far as they are definite, are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 5,680,880 (Miyake et al.). Miyake et al. disclose an exhaust gas recirculation (EGR) valve comprising a base (1), a first port

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(1b), a second port (1b), a valve disc member (3), a valve shaft (4) having a first end fixed to the valve member (3), a linear actuator (41), a rotary motor (12), a valve spring (11) that is linear, a rotor (34), a valve disc member (3) and a valve seat (2) comprise a pintle valve, a flange (7), wherein the second end of the actuator shaft (41) is disc shaped (a cross section of the end of the shaft that is closest to the valve shaft would be the shape of a disc in figure 1), wherein when the valve disc member (3) is in the open position the actuator shaft (41) is in contact with valve shaft (4), wherein when the valve disc member (3) is in the closed position the actuator shaft (41) is not in contact with the valve shaft (4), and wherein the spring (11) is between the actuator (41) and valve disc member (3).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2 and 4 as well as 10, 12, and 20-23 as far as it is definite, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 5,680,880 (Miyake et al.) in view of U.S. Pat. No. 5,941,500 (Lebkuchner). Miyake et al. disclose the above described EGR valve comprising a base (1), a valve disc member (3), a rotary motor (12), a valve shaft (4), a linear actuator (41), and a valve spring (11) but lacks the rotary motor being a synchronous motor and the second end of the valve shaft being curved. Lebkuchner teaches a valve assembly having rotary synchronous (col. 5, lines 33-36) motor (58), a linear actuator (72), a valve shaft (48),

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wherein the valve shaft (48) has curved end portion (figure 5), a valve disc member (50), and a valve seat (38).

Regarding the rotary motor, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the EGR valve having a rotary motor of Miyake et al. by replacing the rotary motor with a rotary synchronous motor as taught by Lebkuchner in order for the motor to turn the actuator as a constant speed which reduced the effect on the flow of the fluid caused by the pressure differential between the two ports as the valve opens and closes.

Regarding the valve shaft having a curved end, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the EGR valve having a valve shaft with a flat send end of Miyake et al. by machining the end of the valve shaft into a curve as taught by Lebkuchner in order to reduce the wear between the contact surface of the valve shaft and the actuator shaft.

8. Claims 8 and 18 as far as it is definite, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 5,680,880 (Miyake et al.) in view of U.S. Pat. No. 6,497,225 (Bircann et al.). Miyake et al. disclose the above described EGR valve comprising a base (1), a valve disc member (3), a rotary motor (12), a valve shaft (4), a linear actuator (41), and a valve spring (11) but lacks a bracket having a first end secured to the base and a second end secured to the motor and the spring between the first and second end. Bircann et al. disclose an EGR valve comprising a motor (42), a base (10), a valve disc (26), a valve seat (18), a valve shaft (14), a spring (38), and a bracket (the portion between the actuator 42 and the base 10 in figure 2) having a first end (the portion connected to base 10 in figure 2) and a second end (the portion

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connected to actuator 42 in figure 2), and the spring (38) is between the first and second end. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the EGR valve having a spring below the bracket of Miyake et al. by extending the bracket so that the spring is above the first end of the bracket as taught by Bircann et al. in order to remove the spring from heated fluid which passes through the valve which may render the spring inoperable.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Pat. No. 6,227,183 (Miyoshi et al.) disclose an EGR valve having a rotary motor.

U.S. Pat. No. 4,742,989 (Akagi) discloses an EGR valve having a bracket that removes the spring from the heated fluid.

U.S. Pat. No. 6,453,891 (Kato et al.) disclose an EGR valve having an actuator member that does not abut the valve shaft during a portion of the operation of the valve.

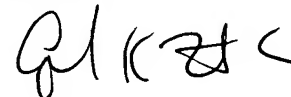
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John K. Fristoe Jr. whose telephone number is (571) 272-4926.

The examiner can normally be reached on Monday-Friday, 7: 00 a.m-4: 30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Justine R. Yu can be reached on (571) 272-4835. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John K. Fristoe Jr.
Examiner
Art Unit 3751

JKF



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5/16/05